

VIDEO

FAQ

Q What's the difference between CCD and CMOS sensors?

A Most camcorders use a charge-coupled device (CCD) sensor to pick up light coming in through the lens and transform that into the electrical signals that eventually become your video footage. However, they are expensive to produce, as they need to be manufactured in specialised chip foundries. They also require separate chips for signal processing, which further adds to the cost of a CCD camera.

Complementary metal oxide semiconductor (CMOS) sensors are cheaper to produce because they are based on the same manufacturing techniques as many other chips, including PC processors. CMOS can have other processing logic integrated directly, such as noise reduction and analogue-to-digital converters. This can reduce the amount of supporting chips required and lower costs dramatically.

This high level of integration can reduce the total surface area used for picking up light. This can make them less effective in low-light conditions. However, CMOS sensors use a fraction of the power of CCDs.

Seth Barton

Notebooks and video expert



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CANON HV10

★★★★★

£823 inc VAT

At first glance, the HV10 seems like a standard DV camcorder. Turn it on, though, and the letters HDV glow bright blue from the side of the LCD screen, highlighting that this is Canon's first affordable high-definition (HD) camcorder.

The HV10 has a 2.96-megapixel CMOS sensor that produces video at a 4:3 aspect ratio with a resolution of 1,440x1,080, around four times greater than regular DV cameras. This is scaled up to a 16:9 widescreen ratio at a resolution of 1,920x1,080 for playback in the 1,080i format. To make sure you capture the best-quality video, Canon has used a system it calls Instant AF. Standard autofocus systems look at the contrast in the image, as an in-focus image has far higher contrast than a blurry one. The HV10 has an extra sensor that roughly calculates the range to the target. This speeds up focusing immensely, so you get fewer blurry moments and more HD sharpness.

The upright design places the strap diagonally across the body of the camcorder. This makes it ideal for holding in front of your body for casual handheld recording. Canon has fitted the HV10 with optical image stabilisation to help you shoot steadier video.

However, to get the best from any camcorder, particularly an HD one, you'll need a tripod. The basic controls are well positioned and clearly labelled. There's an automatic mode to help novices get started immediately.

Despite its high price, there's little for enthusiasts to get excited about. The HV10 is a point-and-shoot-style camcorder. Its compact design leaves no space for an accessory shoe for mounting lights or microphones and the range of manual controls is limited.



The quality of the HD video is excellent, though, making normal DV look soft and fuzzy. Detail is fantastic, bringing scenes to life, and hardly any noise is perceptible. Colours are accurately re-created with no over-saturation. In low-light conditions, it's less impressive, with noise masking some of that detail. You need ideal conditions to get the best out of any CMOS sensor-based camcorder; see our FAQ, left, for details.

If you plan to edit your HD footage, you'll need a powerful PC with lots of RAM and a big hard disk. You'll also need to invest in video-editing software that

supports HD video. Furthermore, you'll need an HD TV or high-resolution monitor to fully appreciate the finished results.

The HV10 is an easy-to-use HD camcorder. Features such as Instant AF and image stabilisation help novices get the best possible HD footage. If you want to shoot HD video today, the HV10 is the easiest way to do it. However, the price is high and you'll need plenty of other kit for the best results.

Seth Barton

SUMMARY

- ✓ Great HD video
- ✓ Fast autofocus
- ✗ Expensive

HD DV CAMERA MiniDV storage, 10x optical zoom, 1/2" 2.96-megapixel CCD, 2.7" LCD screen, component output, phono and composite input and output, USB and FireWire interfaces
PART CODE 1194B001
SUPPLIER www.pixmania.co.uk
DETAILS www.canon.co.uk

PERFORMANCE (see page 56)



Also consider...

SLINGMEDIA Slingbox

★★★★★

£180 inc VAT



The Slingbox allows you to watch television anywhere in the world, as if you were sitting in your own living room. It has SCART and S-video inputs, so you can plug in whichever set-top boxes you want. It's simple to use, and even includes onscreen mock-ups of your remote controls.

This is a great product that's essential if you can't live without your TV.



VIDEO STREAMING DEVICE SCART and S-video inputs, Freeview tuner, IR transmitter, 10/100 Ethernet port PART CODE SB150-110 SUPPLIER www.pcworld.co.uk DETAILS www.slingmedia.com Works well with set-top boxes; easy to set up Can't time-shift Freeview FULL REVIEW Sep 2006

FREECOM DVB-T USB Stick

★★★★★

£28 inc VAT

This was the best digital USB tuner in our Labs test in *Shopper* October 2006. It's easy to get up and running and found all the expected Freeview TV and radio channels. Video quality from our rooftop aerial was very good. There's an excellent EPG, so it's easy to plan your viewing and schedule recordings. Sadly, the included mini remote can't control the EPG, having just basic buttons for changing the channel and volume.

Still, at £28 including VAT, you won't find a cheaper or simpler way of watching and recording Freeview TV on your computer.

USB DIGITAL TV TUNER USB Hi-Speed interface, RF input SUPPLIER Aria 08704 992499 DETAILS www.freecom.com PART CODE 25451 Good value; good EPG Poor remote control FULL REVIEW Oct 2006



PINNACLE PCTV Dual DVB-T Diversity Stick

★★★★★

£78 inc VAT

Digital USB tuners are great for watching Freeview channels on a notebook. In theory, you should be able to take your notebook anywhere, plug in the tuner and enjoy your favourite shows. However, the supplied mini antennas work only if the signal is strong enough, so most of us can't roam further than our aerial sockets allow. Pinnacle's PCTV Dual DVB-T Diversity Stick contains two tuners, which it uses simultaneously to improve reception in areas with poor signal strength.

The stick itself has a pair of inputs, one full-sized RF input on the rear plus a mini RF input on the side. There are two antennas supplied, which must be spaced about a metre apart. They don't stand up well on their own, but a little Blu-Tack kept them firmly in place.

Setup was straightforward, if time consuming. The software is easy to install, but scanning for channels took ages, as the program has to scan for each antenna separately. Surprisingly, it didn't find all the Freeview channels. We tried a second scan at the highest sensitivity, but we were still missing one multiplex. Searching with a rooftop antenna did find it, however.

The two signals are processed together inside the stick to give the best possible results. It's effective; we got excellent reception in two locations, without any sign of dropped frames or audio stutters. This is a significant improvement over other USB sticks we've tested. As well as two aerials, the PCTV has two tuners, so you can watch one channel while



recording another. You can't record two channels at once, however. There's a confusing picture-in-picture system when you use the tuners to receive two programmes. You must be careful, as any of these features will deactivate the diversity reception. The EPG is poor, with only now and next information displayed. However, you can record directly to iPod- or PSP-compatible video files, as well as directly to DivX format.

The interface works fine for basic viewing and the included remote control is excellent. It's compact, but has proper rubber buttons, making it much better than the ultra-slim remote controls that often come with USB stick tuners. Also included is Pinnacle's useful MediaCenter software, which lets you browse all your media files through one interface, plus Pinnacle Studio Quickstart for basic video editing and DVD creation.

This is an expensive USB stick, but it has two tuners. The software isn't good enough to make the most of them individually. Still, if you travel a lot, or want to watch TV in the garden, this USB stick will give you the best possible chance of receiving watchable digital TV.

Seth Barton

SUMMARY

- ✓ Twin tuners and antennas
- ✓ Good remote control
- ✗ Can't record two channels at once

USB TV TUNER USB interface, two RF inputs, two digital tuners
PART CODE 230100147
SUPPLIER www.pixmania.co.uk
DETAILS www.pinnaclesys.com

CHOOSING A... TV Card

Follow the steps to find your ideal specs

INTERFACE: PCI
TUNES TO: Analogue
INPUTS: Radio frequency (RF)
CAPTURE FORMAT: N/A
HARDWARE COMPRESSION: No
Recommended minimum in grey

1 TV cards connect to PCs through a variety of interfaces. Internal cards fit into PCI or PCI-E x1 slots. Some double as graphics cards and use an AGP or PCI-E x16 slot. External devices with USB interfaces are easier to install but use up a USB port. USB stick and PC Card versions are also available, and are ideal for notebooks.

2 Most devices tune to either analogue or digital TV broadcasts from an external aerial, but hybrid devices can receive both types of broadcast. Terrestrial digital TV, or Freeview as it's commonly known in the UK, provides extra free channels, but you can't access subscription channels with a PC TV card. Analogue broadcasts can give a superior picture to digital broadcasts, but digital tuners don't suffer from noise and ghosting when the reception is poor – although they may cut out altogether. Check the digital reception in your area by going to www.freeview.co.uk and entering your postcode.

3 Basic devices provide an RF input for connecting an aerial. To connect an analogue video device, such as a camcorder or VCR for video editing, look for a composite or, preferably, S-video input. Digital tuners tend not to include this feature. Buy a hybrid device if you want to receive digital TV and capture analogue video.

4 If you want to use your PC for video editing or as a digital video recorder, you'll need to capture video in an appropriate compression format. The most practical format is MPEG2, which gives excellent quality and reasonable file sizes.

A PC with a 1GHz or faster processor can compress video to MPEG2 format in software, while slower machines need hardware compression on the card. Digital TV is broadcast in MPEG2 format, which makes recording to disk easy. Expect an hour of MPEG2 video to take up roughly 1.5GB of hard disk space.

5 Factor in any extras you want, such as an FM radio, a remote control and software for scheduled recordings and pausing live TV.

CANON MV960

★★★★★

£243 inc VAT



This budget DV camera is designed to shoot video in widescreen to match your living room TV. It also has a widescreen LCD to help you frame shots. The controls are self-explanatory and there's an easy mode for beginners.

The MV960 shoots great video. Colours look excellent, from skin tones to brighter shades, and there's a surprising amount of detail. You will see some picture noise, but it's minimal in decent lighting conditions.

DV CAMERA MiniDV storage, 25x optical zoom, 1/4" 0.8-megapixel CCD, 2.7" LCD screen, phono and composite output PART CODE 1207B007AA
SUPPLIER www.amazon.com DETAILS www.canon.co.uk
✓ Widescreen recording and LCD; easy menu system
✗ Low-resolution stills FULL REVIEW Aug 2006



HUMAX Duovisio PVR-9200T

★★★★★

£177 inc VAT

The Duovisio has twin digital tuners to receive Freeview broadcasts, so you can watch one programme while recording another, or record two programmes at once. The 160GB hard disk can hold around 100 hours of recorded shows and enables you to pause and rewind live TV.

Its interface is excellent, making it easy to browse channels and schedule recordings from the one-week EPG. The only disappointment is in its inability to schedule entire series as you can with Sky+. Otherwise, it's excellent.

HARD DISK RECORDER Two digital tuners, 160GB hard disk, RF input, two SCART, RF, composite, stereo phono, optical S/PDIF output, USB PART CODE PVR-9200T SUPPLIER www.martindawes.net DETAILS www.humaxdigital.com/uk
✓ Twin digital tuner; easy-to-use interface ✗ Minor scheduling problems FULL REVIEW Jun 2006

